

In the Claims:

1. (Currently Amended) A method of making a composite structure, the method comprising:

(a) locating at least two peel plies on the bonding surface of a component, with a first one of the peel plies being of a woven material and being in contact with the bonding surface;

then

(b) inserting pins through the peel plies and into the component prior to curing of the component; then

(c) curing the component; ~~then~~

(d) providing a woven preform having a base and two legs extending from the base, the legs defining a slot; then

(e) removing the peel plies to expose a stubble created by the pins and placing the base of the preform against the bonding surface of the component, the pins extending into the base of the preform; and

(f) curing the preform to adhere the base of the preform to the component.

2. (Original) The method of claim 1, further comprising:

inserting a second component into the slot of the preform after step (e) and before step (f); and

completing step (f) with the second component in the slot.

3. (Withdrawn) The method of claim 1, further comprising:

inserting a rigid sizing tool into the slot of the preform after step (e) and before step (f);

completing step (f) with the sizing tool in the slot;

removing the sizing tool after step (f), the slot being sized for insertion of a second component; and

inserting the second component into the slot and adhering the second component to the preform.

4. (Currently Amended) A method of joining first and second composite components, the method comprising:

(a) placing a stack of layers onto a bonding surface of the first component, a first layer of the stack of layers being in contact with the bonding surface and being a woven peel ply layer;

~~(a)~~ (b) providing a plurality of Z-pins in a foam carrier and inserting the Z-pins through the stack of layers into the first component prior to curing the first component; ends of the Z-pins extending above a bonding surface of the first component and forming a stubble by placing the foam carrier in contact with the stack of layers and exerting a force on the foam carrier;

(b) ~~(c)~~ curing the first component;

(d) leveling the Z-ins to cause ends of the Z-pins to be flush with an exterior surface of the stack of layers with the foam carrier removed;

(e) ~~(e)~~ providing a woven preform having a base and ~~two legs~~ at least one leg extending from the base, ~~the legs defining a slot;~~

~~(d)~~ (f) removing the stack of layers after the first component has been cured, creating a stubble of Z-pins above the bonding surface, then placing the base of the preform against the bonding surface of the first component , the stubble extending into the base of the preform;

~~(e)~~ (g) inserting placing the second component into the slot of in contact with the leg of the preform; and

~~(f)~~ (h) curing the preform to adhere the base of the preform to the first component and the ~~legs~~ leg of the preform to the second component, joining the components with the preform.

5. (Currently Amended) The method of claim 4, further comprising:

in step ~~(d)~~ (f), inserting adhesive between the base of the preform and the first component.

6. (Currently Amended) The method of claim 4, further comprising:

in step ~~(e)~~ (g), inserting adhesive between the ~~legs~~ leg of the preform and the second component.

7. (Currently Amended) The method of claim 4, further comprising:

~~before step (a), locating at least two peel plies on the bonding surface of the first component and removing the peel plies after step (b) and before step (d) removing the foam carrier before curing the panel in step (c).~~

8. (Currently Amended) The method of claim 4, ~~further comprising wherein step (d) comprises:~~

~~before step (a), locating at least two peel plies on the bonding surface of the first component;~~

~~after curing the panel in step (b) (c) and before step (d), removing at least one of the peel plies~~ layers and trimming the stubble to a height equal to a height of the ~~layers peel plies~~ that remain on the bonding surface; and

~~removing the remaining peel plies after trimming the stubble but before step (d).~~

9. (Currently Amended) The method of claim 4, ~~further comprising wherein step (d) comprises:~~

~~before curing the panel in step (a) (c), locating at least two woven fabric peel plies on the bonding surface of the first component and removing at least one of the the peel plies after step (b) and before step (d) layers to expose ends of the Z-pins and exerting an additional force on the ends of the Z-pins until the ends are flush with the exterior surface of the remaining layers.~~

10. (Currently Amended) The method of claim 4, wherein:

the peel ~~plies are~~ ply is formed from nylon fibers.

11. (Currently Amended) The method of claim 4, wherein:

the peel ~~plies are~~ ply is formed from glass fibers.

12. (Currently Amended) The method of claim 4, ~~further comprising~~ wherein the stack of layers comprises:

~~before step (a), locating an elastomeric spacer located above the first layer, on the bonding surface of the first component;~~

~~after step (b) and before step (d), trimming the stubble to a height equal to a height of the spacer; and~~

~~removing the spacer after trimming the stubble but before step (d).~~

13.-16. (Canceled)

17. (Currently Amended) A method of joining a woven preform to a panel, the method comprising:

(a) placing at least one woven peel ply layer in contact with a bonding surface of a composite panel;

(a) (b) providing a plurality of Z-pins within a foam carrier and inserting Z-pins into the peel ply layer a and the composite panel prior to curing the panel by placing the foam carrier on the peel ply layer and exerting a downward force on the foam

~~carrier, then removing the foam carrier, the Z-pins extending above a bonding surface of the panel and forming a stubble; then~~

~~(b)~~ (c) curing the panel; then

(d) ~~after the panel is fully cured, removing the peel ply layer to expose the bonding surface and form a stubble of Z-pins protruding from the bonding surface;~~

~~(e)~~ (e) providing a woven preform having a base and at least one leg that extends from the base, the preform being infused with uncured resin; then

~~(d)~~ (f) placing the base of the preform against the bonding surface of the panel after the peel ply layer has been removed, the stubble extending into the base of the preform; then

~~(e)~~ (g) curing the preform with each the at least one leg in a desired orientation.

18. (Currently Amended) The method of claim 17, further comprising:

(f) ~~attaching a composite component to at least one leg. after application of the peel ply and before insertion of the Z-pins, heating the panel and the peel ply to hot debulk the panel and the peel ply.~~

19. (Currently Amended) The method of claim 17, further comprising:

~~before step (a), locating at least two peel plies on the bonding surface of the panel and removing the peel plies after step (b) and before step (d) shearing ends of the Z-pins flush with an exterior surface of the peel ply layer before step (f).~~

20. (Currently Amended) The method of claim 17, ~~further comprising: wherein~~

~~before step (a); comprises locating~~ placing at least two of the woven-fabric peel plies on the bonding surface of the panel with a non-porous film between them and removing the ~~peel plies after step (b) and before step (d)~~ both of the peel plies and the non-porous film before step (f).

21. (Currently Amended) The method of claim 17, ~~further comprising: wherein~~  
~~before step (a); further comprises~~ locating an elastomeric spacer on the ~~bonding surface of the panel peel ply~~ and removing the spacer along with the peel ply after step (b) and before step (d f).

22. (New) The method according to claim 17, further comprising:

in step (a) placing additional layers on the woven peel ply before inserting the Z-pins;  
and

after insertion of the Z-pins, removing at least one of the additional layers along with the foam carrier, and leveling the Z-pins to cause ends of the Z-pins to be flush with the remaining layers on the bonding surface of the panel.

23. (New) The method according to claim 22, wherein the Z-pins are leveled by shearing the ends of the Z-pins after the panel is cured in step (c).

24. (New) The method according to claim 1, wherein step (b) comprises placing a foam carrier containing the pins against the peel plies and exerting a downward force on the foam carrier, then removing the foam carrier before curing the component in step (c).

25. (New) The method according to claim 24, further comprising leveling the pins to cause ends of the pins to be flush with an exterior surface of the peel plies after removal of the foam carrier.

26. (New) The method according to claim 24, further comprising after removal of the foam carrier and after curing the component in step (c), removing at least one of the peel plies and shearing protruding ends of the pins to be flush with an exterior surface of a remaining one of the peel plies.